



Installing and Formatting Cisco 2691, Cisco 3631 and Cisco 3700 CompactFlash Memory Cards

Product Numbers: MEM2691-32CF=, MEM2691-64CF=, MEM2691-128CF=, MEM3631-32CF=, MEM3631-64CF=, MEM3631-128CF=, MEM3725-32CF=, MEM3725-64CF=, MEM3725-128CF=, MEM3745-32CF=, MEM3745-64CF=, MEM3745-128CF=

This document describes how to install Cisco 2691, Cisco 3631, and Cisco 3700 CompactFlash memory cards in Cisco modular routers which use Cisco 2691, Cisco 3631, or Cisco 3700 CompactFlash memory. This document also contains procedures for formatting the CompactFlash cards with a Class B Flash file system (low end file system) or a Class C Flash file system (similar to DOS), and it describes how to perform file and directory operations in each file system. Some Cisco routers have an external CompactFlash memory card that resides in a slot in the rear panel; some have an internal CompactFlash memory card that mounts on a connector on the CPU/mainboard; and some have both. Cisco 2691, Cisco 3631, and Cisco 3700 CompactFlash memory cards are available with 32, 64, or 128 MB of memory.

Use this document with the *Cisco 2600 Series, 3600 Series, and 3700 Series Regulatory Compliance and Safety Information* document, which shipped with your router. If you have questions or need help, refer to the [“Obtaining Documentation” section on page 31](#).

This document contains the following sections:

- [Preventing Electrostatic Discharge Damage, page 2](#)
- [External CompactFlash Memory Card Installation and Removal, page 2](#)
- [Internal CompactFlash Memory Card Installation and Removal, page 4](#)
- [Formatting Procedures for CompactFlash Memory Cards, page 20](#)
- [File and Directory Procedures, page 23](#)
- [Obtaining Documentation, page 31](#)
- [Obtaining Technical Assistance, page 32](#)

Preventing Electrostatic Discharge Damage

CompactFlash memory cards are sensitive to electrostatic discharge (ESD) damage. ESD damage, which can occur when electronic cards or components are handled improperly, results in complete or intermittent failures.

Follow these guidelines to prevent ESD damage:

- Always use an ESD wrist or ankle strap and ensure that it makes good skin contact.
- Connect the equipment end of the strap to an unfinished chassis surface.
- Place a removed CompactFlash memory card on an antistatic surface or in a static shielding bag. If the card will be returned to the factory, immediately place it in a static shielding bag.
- Avoid contact between the card and clothing. The wrist strap protects the card from ESD voltages on the body only; ESD voltages on clothing can still cause damage.
- Do not remove the wrist strap until the installation is complete.

**Caution**

For safety, periodically check the resistance value of the antistatic strap. The measurement should be between 1 and 10 megohms (Mohms).

Tools and Equipment Needed

You need the following tools and equipment to remove and install CompactFlash memory cards:

- ESD-preventive wrist strap
- Antistatic bag or mat
- Number 2 Phillips screwdriver or flat blade screwdriver (only for internally mounted CompactFlash memory cards)

External CompactFlash Memory Card Installation and Removal

Complete the appropriate procedure below for installing or removing a CompactFlash memory card if your Cisco router has an external CompactFlash memory card.

If you have questions or need assistance, see the [“Obtaining Technical Assistance”](#) section on page 32.

External CompactFlash memory-card slots are located as shown in [Figure 1](#), [Figure 2](#), and [Figure 3](#).

Figure 1 External CompactFlash Slot Location in a Cisco 2691 Router

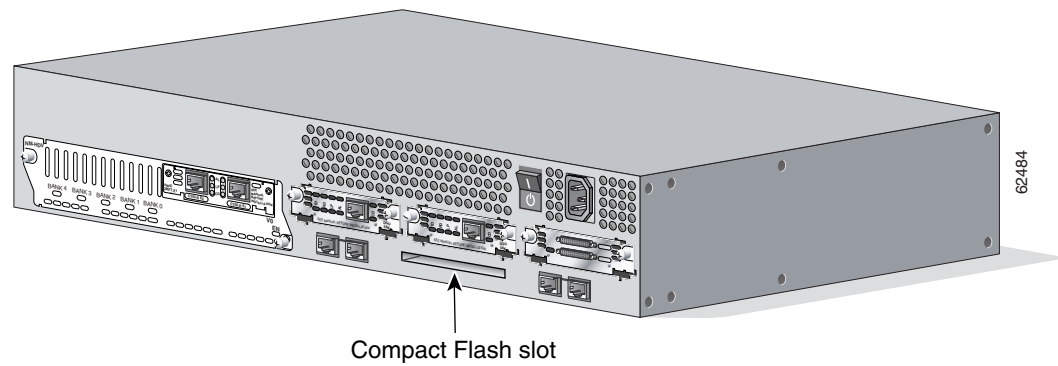


Figure 2 External CompactFlash Slot Location in a Cisco 3725 Router

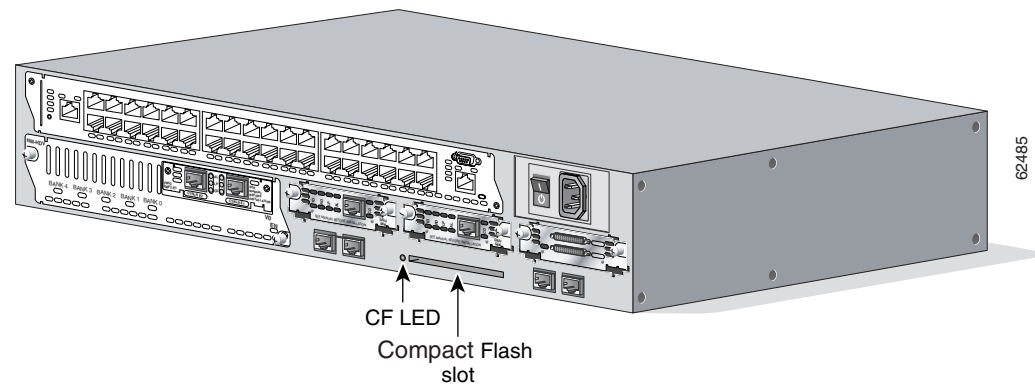
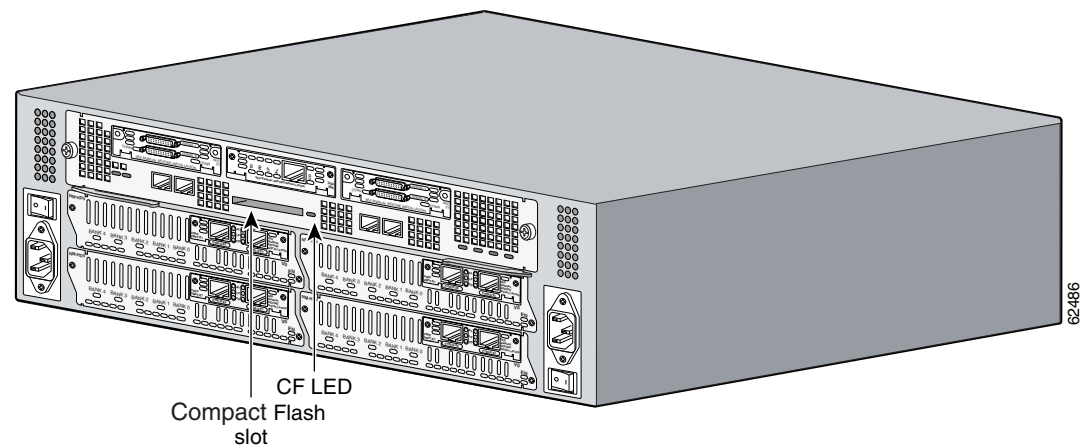


Figure 3 External CompactFlash Slot Location in a Cisco 3745 Router



Removing a CompactFlash Memory Card from an External Slot

Complete the following steps to remove a CompactFlash memory card from an external slot:



Caution

If the CF LED is lit or blinking, do not remove the CompactFlash memory card. The router might reload, or the CompactFlash memory card can be damaged.

-
- Step 1** Locate the CompactFlash memory card in its slot in the front panel of the chassis. (See [Figure 1](#), [Figure 2](#), and [Figure 3](#).)
 - Step 2** Move the release button, located next to the slot, to its fully extended position, and press the button to unseat the card.
 - Step 3** Carefully pull the card out of the slot.
 - Step 4** Place the removed CompactFlash memory card on an antistatic surface or in a static shielding bag.
-

Installing a CompactFlash Memory Card in an External Slot

Complete the following steps to install a CompactFlash memory card:

-
- Step 1** Locate the CompactFlash memory-card slot in the front panel of the chassis. (See [Figure 1](#), [Figure 2](#), and [Figure 3](#).)
 - Step 2** With the label facing up, insert the connector end of the CompactFlash memory card into the slot until the card is seated in the connector and the release button is pushed out. The card is keyed so that it cannot be inserted wrong.
 - Step 3** Pull the release button out and move it to the left, to latch the card in the slot.
 - Step 4** Refer to the “[Formatting Procedures for CompactFlash Memory Cards](#)” section on page 20 for instructions on formatting the CompactFlash memory card.
-

Internal CompactFlash Memory Card Installation and Removal

Complete the appropriate procedure below for installing or removing a CompactFlash memory card mounted internally on the CPU/mainboard. To access the internal CompactFlash memory card, you need to either remove the chassis cover or slide the CPU/mainboard out, depending on the platform. For Cisco 2691, Cisco 3631, and Cisco 3725 routers, refer to the “[Removing the Chassis Cover](#)” section on page 9. For Cisco 3745 routers, refer to the “[Removing a Plug-in CPU/Mainboard](#)” section on page 7.

If you have questions or need assistance, see the “[Obtaining Technical Assistance](#)” section on page 32.

Internal CompactFlash memory card connectors are located as shown in [Figure 4](#), [Figure 5](#), [Figure 6](#), and [Figure 7](#).

Figure 4 Internal CompactFlash Memory Card Location in a Cisco 2691

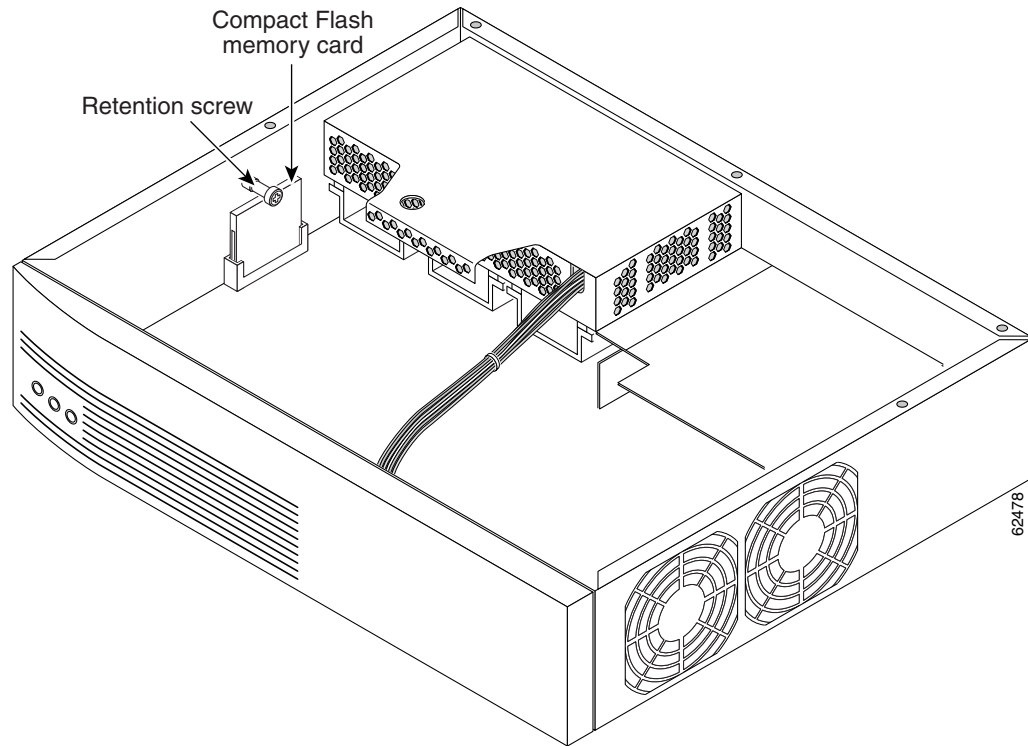


Figure 5 Internal CompactFlash Memory Card Location in a Cisco 3631

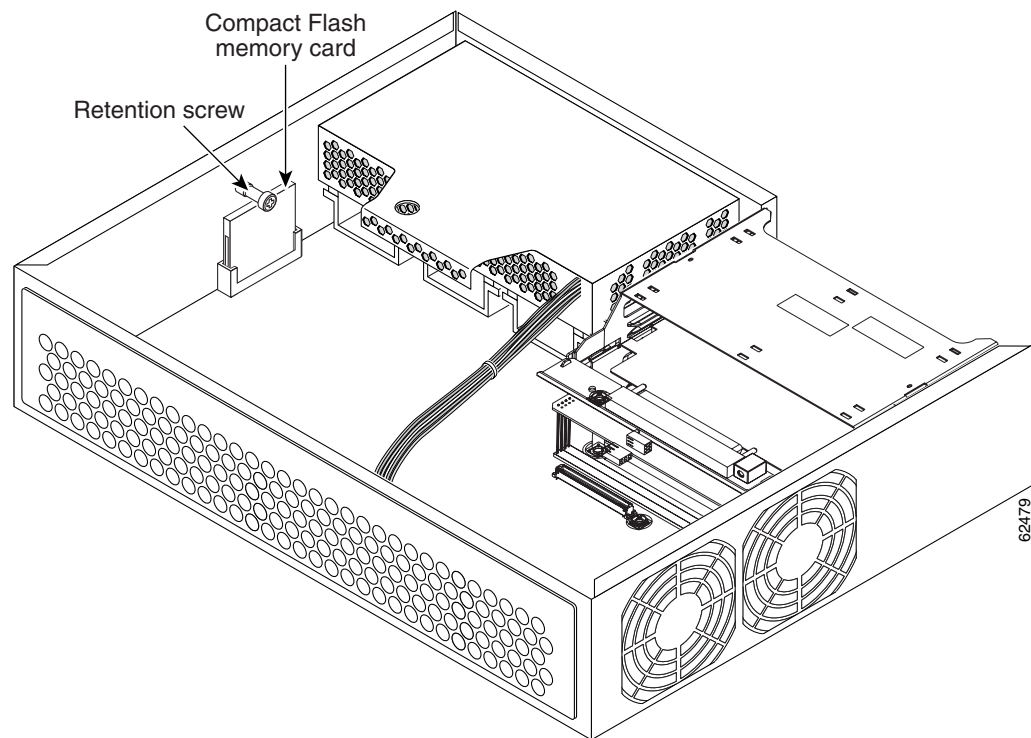


Figure 6 Internal CompactFlash Memory Card Location in a Cisco 3725

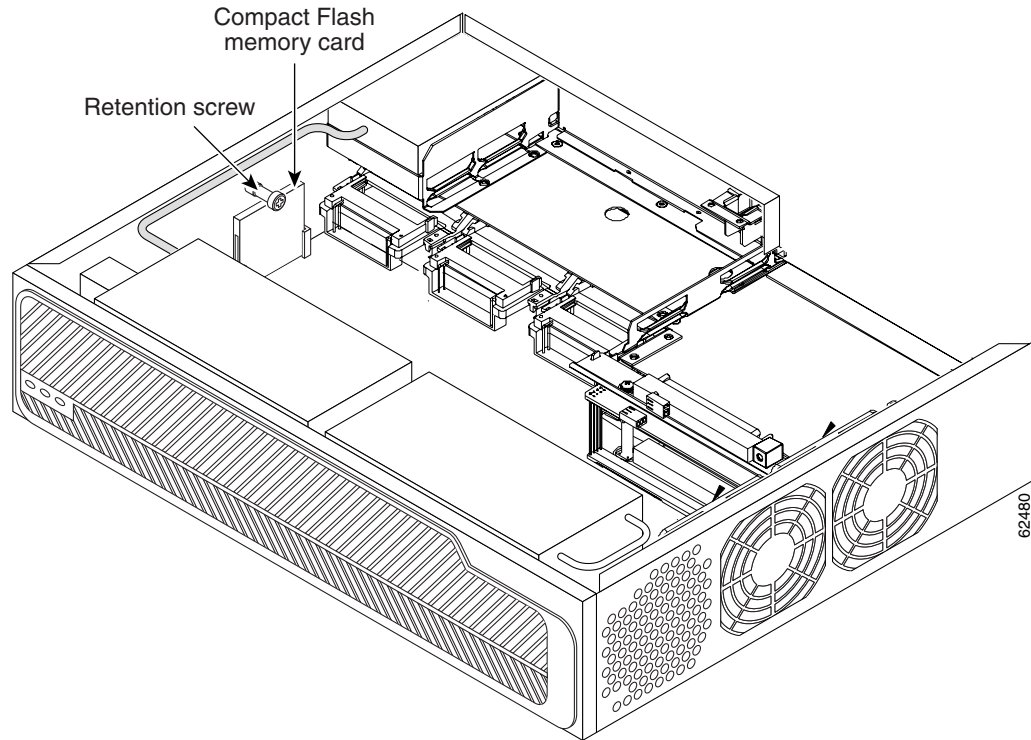
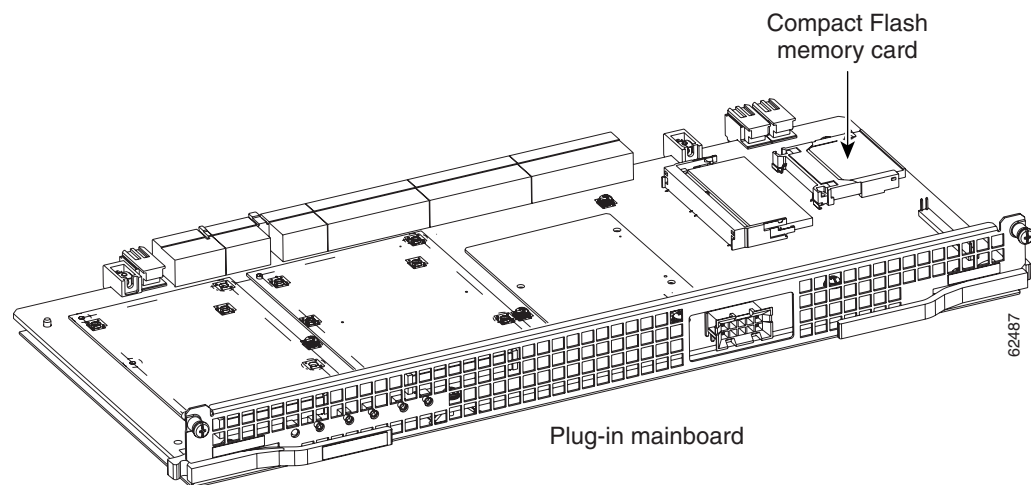


Figure 7 Internal CompactFlash Memory Card Location in a Cisco 3745



Removing a Plug-in CPU/Mainboard

This section describes how to access a CompactFlash memory card mounted on a CPU/mainboard that slides out of the chassis. You need a number 2 Phillips or flat-blade screwdriver to complete this procedure.

Cisco 3745 routers have a plug-in CPU/mainboard.

Observe the following precaution if your router uses AC power:



Warning

Do not touch the power supply when the power cord is connected. For systems with a power switch, line voltages are present within the power supply even when the power switch is OFF and the power cord is connected. For systems without a power switch, line voltages are present within the power supply when the power cord is connected. To see translations of the various warnings that appear in this publication, refer to the Regulatory Compliance and Safety Information document that accompanied this device.

Observe the following precaution if your router uses DC power:



Warning

Before performing any of the following procedures, ensure that power is removed from the DC circuit. To ensure that all power is OFF, locate the circuit breaker on the panel board that services the DC circuit, switch the circuit breaker to the OFF position, and tape the switch handle of the circuit breaker in the OFF position. To see translations of the various warnings that appear in this publication, refer to the Regulatory Compliance and Safety Information document that accompanied this device.

Complete the following procedure to remove the CPU/mainboard from the chassis:

Step 1

Power OFF the router. However, to channel ESD voltages to ground, do not unplug the power cable.



Caution

The Cisco 3745 can have more than one power supply. Be sure that all power supplies are powered OFF, and that the LEDs are all dark.

Step 2

Place the router on a flat surface so that the front panel is facing you, and open the small access panel at the right-hand edge of the front panel.

Step 3

Loosen the two captive screws located behind the access panel. (See [Figure 8](#).)

Step 4

Open the front panel to the straight-out position, and lift it off its hinges. (See [Figure 8](#).)

Step 5

Loosen the captive retention screws; there is one at each side of the CPU/mainboard. (See [Figure 9](#).)

Step 6

Pull the ejector levers at both sides, and carefully pull the CPU/mainboard straight out of the chassis. Place it on an antistatic surface. (See [Figure 9](#).)

Step 7

When you are ready to reinstall the CPU/mainboard, refer to the [“Reinstalling a Plug-in CPU/Mainboard”](#) section on page 14.

Figure 8 *Removing the Front Panel from a Cisco 3745 Router*

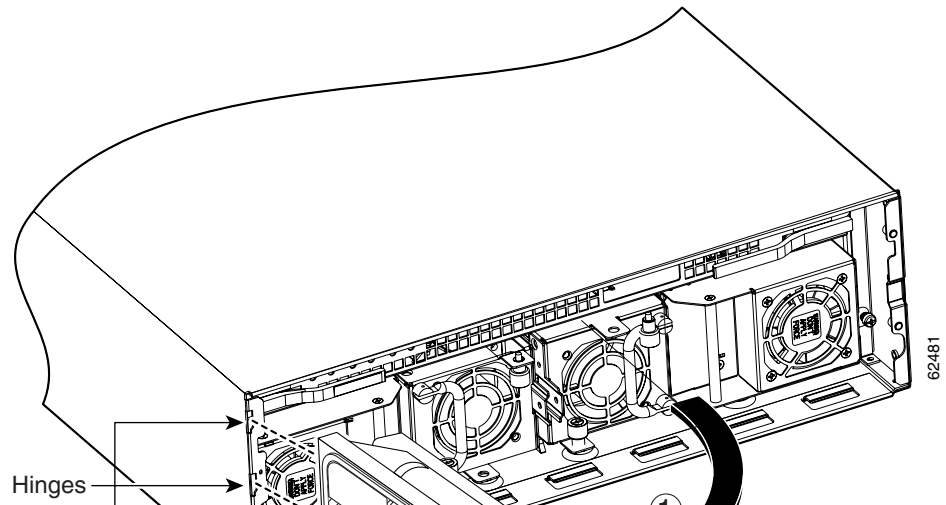
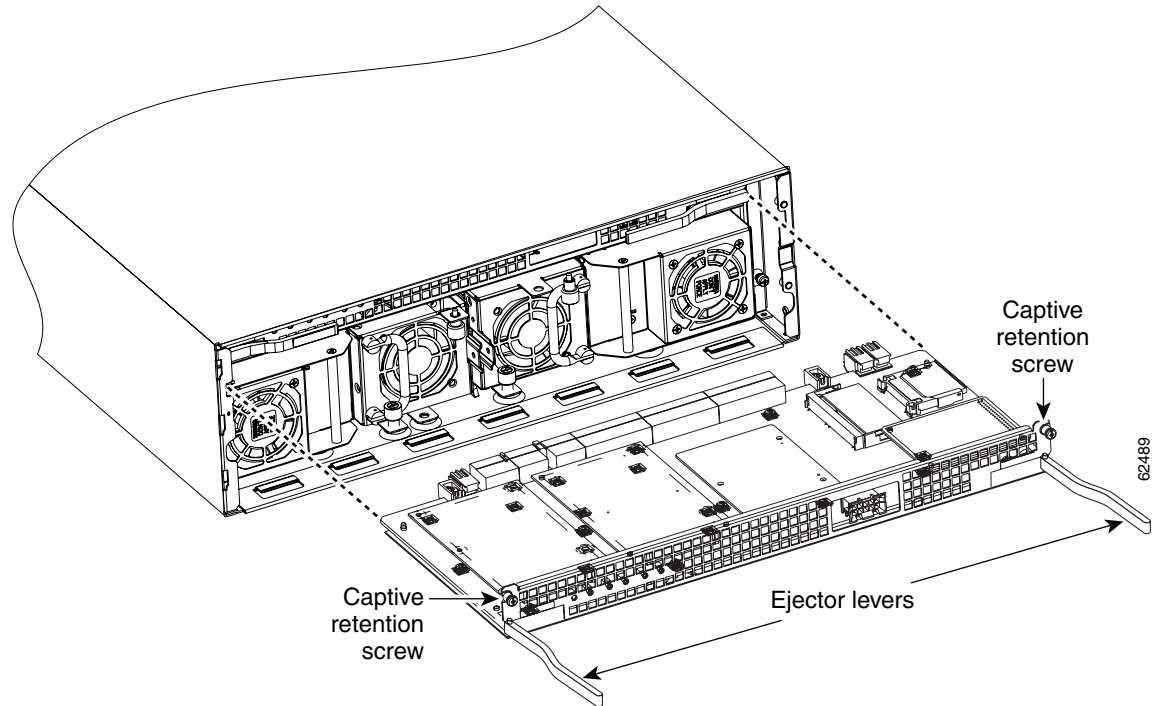


Figure 9 Removing the CPU/Mainboard from a Cisco 3745 Router



Removing the Chassis Cover

This section describes how to remove the chassis cover to access internally mounted CompactFlash memory cards. You need a number 2 Phillips or flat-blade screwdriver to complete this procedure.

You must remove the chassis cover from Cisco 2691, Cisco 3631, and Cisco 3725 routers.

Observe the following precaution if your router uses AC or DC power:



Warning

Do not touch the power supply when the power cord is connected. For systems with a power switch, line voltages are present within the power supply even when the power switch is OFF and the power cord is connected. For systems without a power switch, line voltages are present within the power supply when the power cord is connected. To see translations of the various warnings that appear in this publication, refer to the Regulatory Compliance and Safety Information document that accompanied this device.

Observe the following precaution if your router uses DC power:



Warning

Before performing any of the following procedures, ensure that power is removed from the DC circuit. To ensure that all power is OFF, locate the circuit breaker on the panel board that services the DC circuit, switch the circuit breaker to the OFF position, and tape the switch handle of the circuit breaker in the OFF position. To see translations of the various warnings that appear in this publication, refer to the Regulatory Compliance and Safety Information document that accompanied this device.

Complete the following procedure to remove the chassis cover:

-
- Step 1** Power OFF the router. However, to channel ESD voltages to ground, do not unplug the power cable.



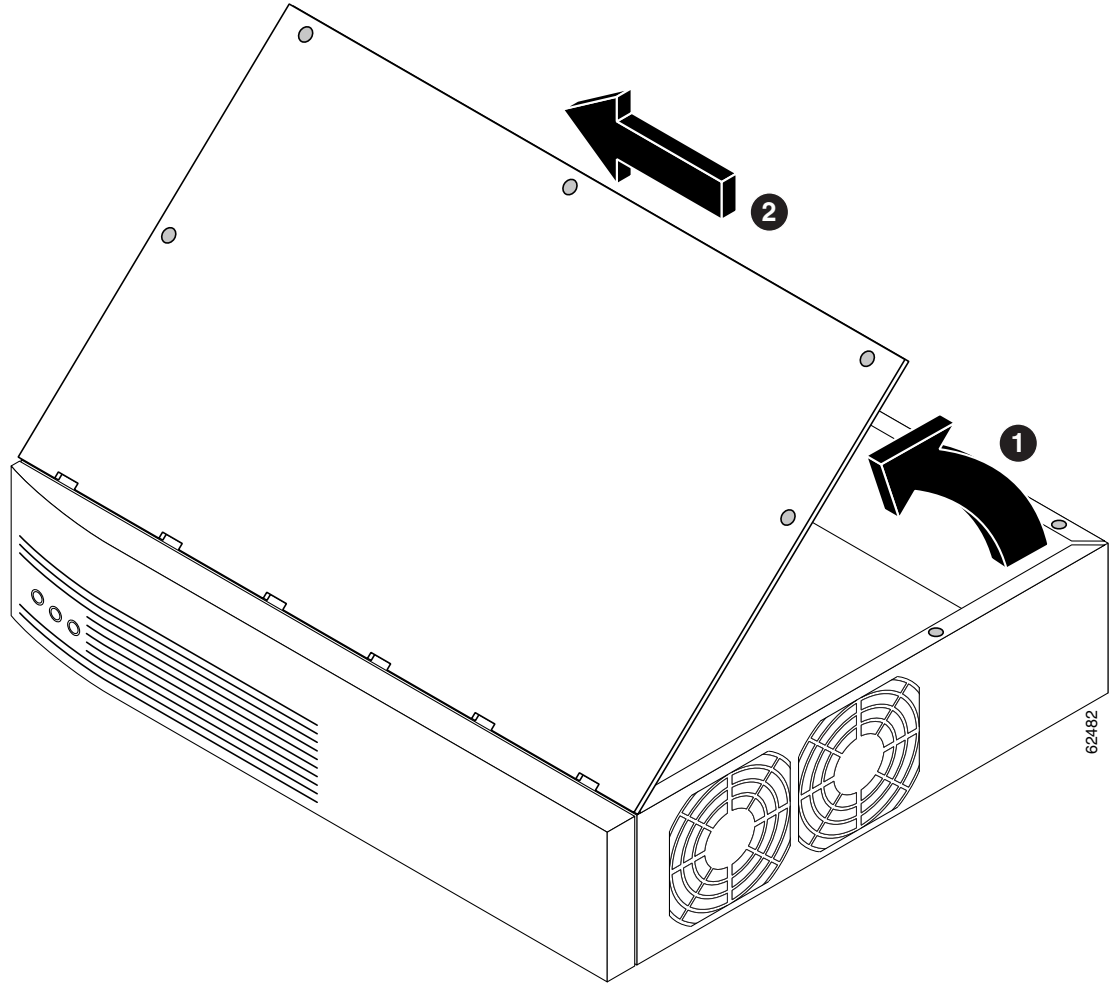
Warning

Before opening the chassis, disconnect the telephone-network cables to avoid contact with telephone-network voltages. To see translations of the various warnings that appear in this publication, refer to the Regulatory Compliance and Safety Information document that accompanied this device.

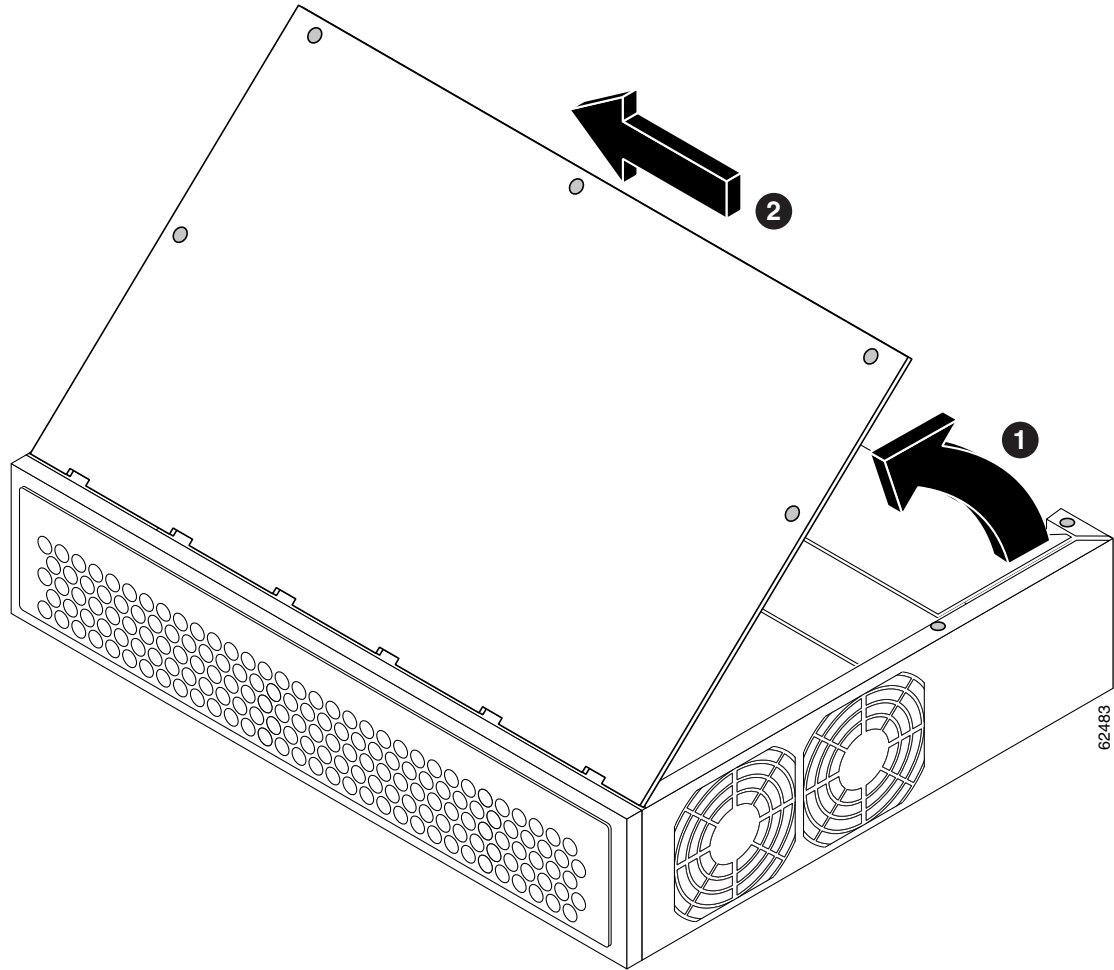
- Step 2** Disconnect all network interface cables from the rear panel.
- Step 3** Place the router on a flat surface. Remove the screws located on top of the cover (five screws on a Cisco 2691 or Cisco 3631 router; six screws on a Cisco 3725 router). Set the screws aside in a safe place.
- Step 4** Rotate the cover up to a 45-degree angle. (See [Figure 10](#), [Figure 11](#), or [Figure 12](#).)
- Step 5** Slide the cover to the side (away from the side with the fans) until the tabs are free from the slots. (See [Figure 10](#), [Figure 11](#), or [Figure 12](#).)
-

To replace the cover, see the [“Reinstalling the Cover on a Cisco Router”](#) section on page 16.

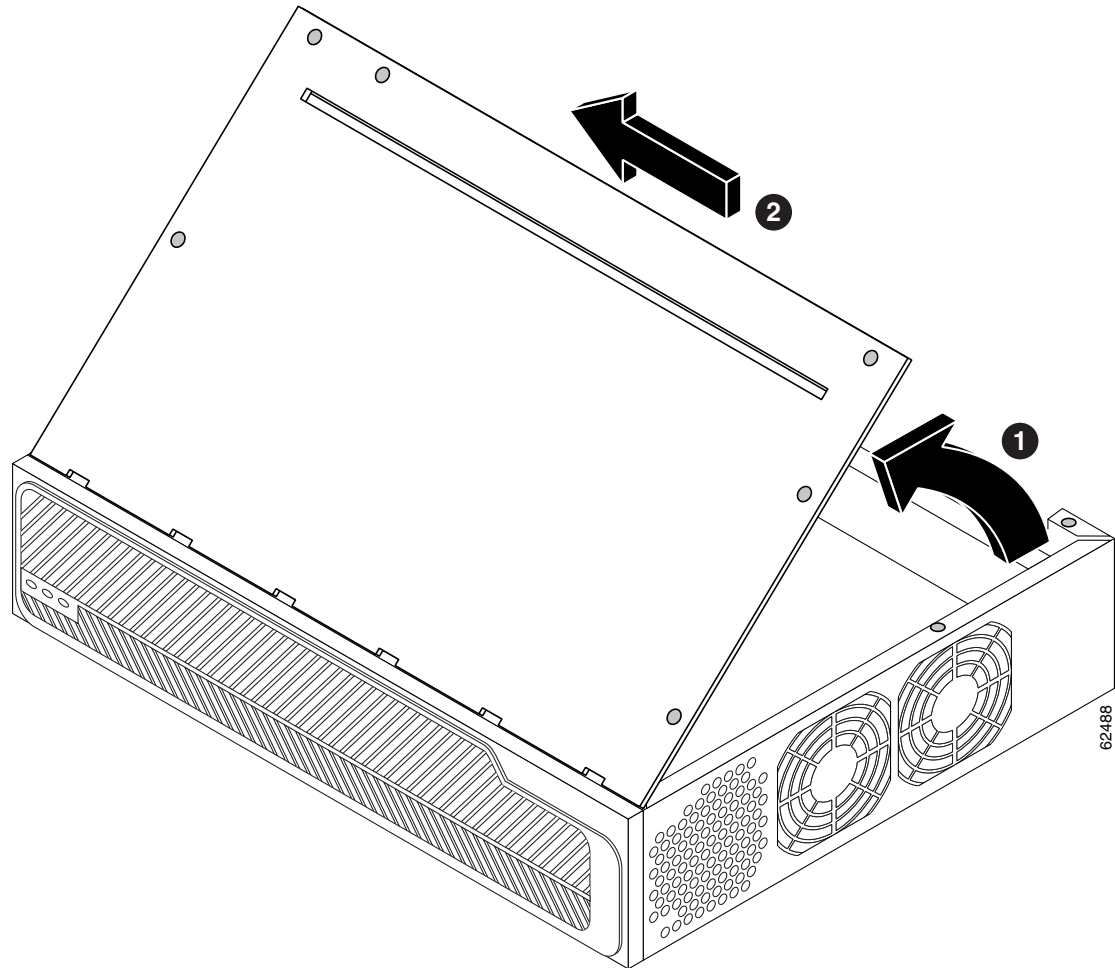
Figure 10 *Removing the Cover from a Cisco 2691*



1	Lift cover	2	Slide cover
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Figure 11 *Removing the Cover from a Cisco 3631*

1	Lift cover	2	Slide cover
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Figure 12 Removing the Cover from a Cisco 3725

1	Lift cover	2	Slide cover
----------	------------	----------	-------------

Removing an Internal CompactFlash Memory Card

Cisco 2691 routers, Cisco 3631 routers, and Cisco 3700 series routers have an internal connector on the CPU/mainboard that may hold a CompactFlash memory card.

After removing the plug-in CPU/mainboard or the chassis cover as described in the [“Removing a Plug-in CPU/Mainboard”](#) section on page 7 or in the [“Removing the Chassis Cover”](#) section on page 9, complete the following steps to remove an internal CompactFlash memory card from the router:

- Step 1** Locate the CompactFlash memory card on the CPU/mainboard. (See [Figure 4](#), [Figure 5](#), [Figure 6](#), or [Figure 7](#).)
- Step 2** If there is a retention screw, remove it from the standoff, using the Phillips screwdriver; save the retention screw for reinstallation.
- Step 3** Carefully pull the CompactFlash memory card free from the connector.

-
- Step 4** Place the removed CompactFlash memory card on an antistatic surface or in a static shielding bag.
-

Installing an Internal CompactFlash Memory Card

Cisco 2691 routers, Cisco 3631 routers, and Cisco 3700 series routers have an internal connector for a Compact Flash memory card. You can install a CompactFlash memory card with 32-, 64-, or 128-MB of memory.

Complete the following steps to install an internal CompactFlash memory card:

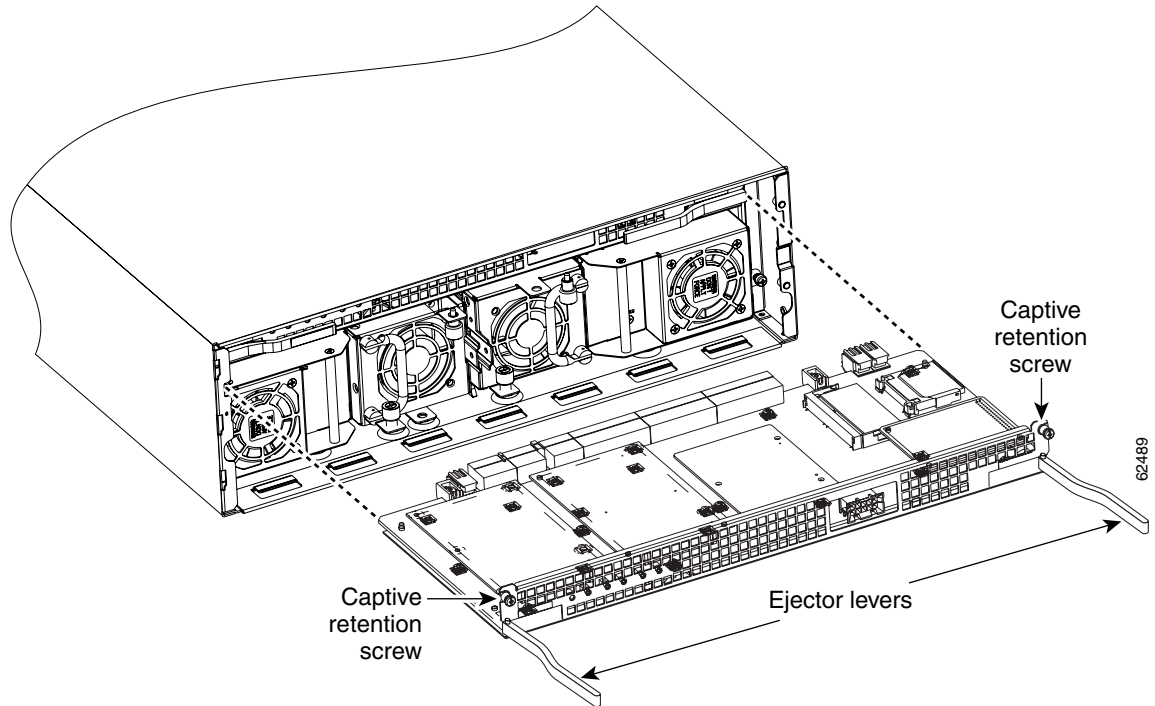
-
- Step 1** Locate the CompactFlash memory-card connector on the CPU/mainboard. (See [Figure 4](#), [Figure 5](#), [Figure 6](#), or [Figure 7](#).)
- Step 2** Insert the connector end of the CompactFlash memory card into the connector until the card is seated in the connector. The card is keyed so that it cannot be inserted incorrectly.
- Step 3** If there was a retention screw, reinstall it in the standoff.
- Step 4** Install the plug-in CPU/mainboard or the chassis cover as described in the “[Reinstalling a Plug-in CPU/Mainboard](#)” section on [page 14](#) or the “[Reinstalling the Cover on a Cisco Router](#)” section on [page 16](#).
- Step 5** Refer to the “[Formatting Procedures for CompactFlash Memory Cards](#)” section on [page 20](#) for instructions on formatting the CompactFlash memory card.
-

Reinstalling a Plug-in CPU/Mainboard

This section describes how to reinstall a plug-in CPU/mainboard. You need a number 2 Phillips screwdriver or flat blade screwdriver to complete this procedure:

-
- Step 1** Place the chassis so the empty CPU/mainboard slot faces you.
- Step 2** Make sure that the ejector levers are fully open. Carefully insert the CPU/mainboard into the chassis slot until the connector is engaged, then close the ejector levers to fully seat the CPU/mainboard connector. (See [Figure 13](#).)

Figure 13 Inserting Plug-in CPU/Mainboard into a Cisco 3745 Chassis



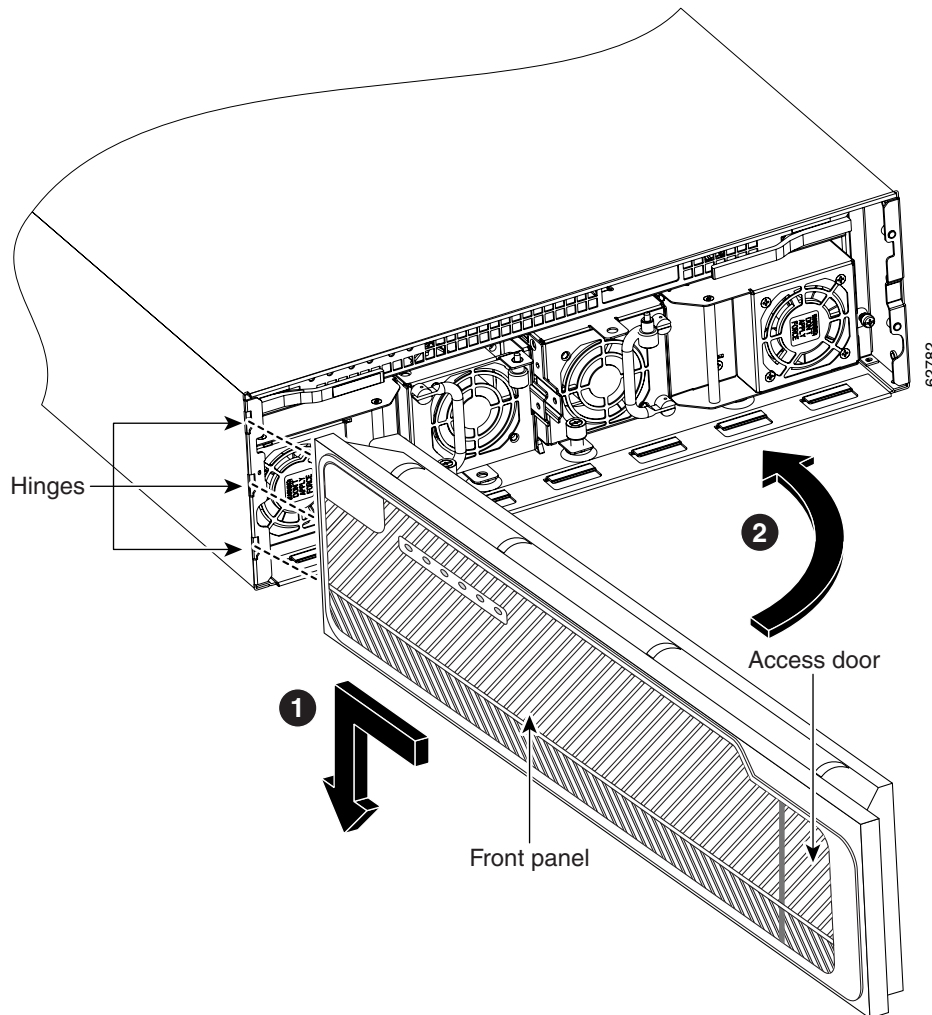
- Step 3** Tighten the two captive retention screws; there is one at each edge of the CPU/mainboard.
- Step 4** Hold the front panel straight out from the chassis, engage the hinges, and close the front panel. (See [Figure 14](#).)
- Step 5** Tighten the two captive screws behind the small access panel at the right-hand edge.
- Step 6** Power ON the router.

Observe the following precaution if your router uses DC power:



Warning

After wiring the DC power supply, remove the tape from the circuit breaker switch handle and reinstate power by moving the handle of the circuit breaker to the ON position. To see translations of the various warnings that appear in this publication, refer to the Regulatory Compliance and Safety Information document that accompanied this device.

Figure 14 *Installing the Front Panel on a Cisco 3745 Router*

Reinstalling the Cover on a Cisco Router



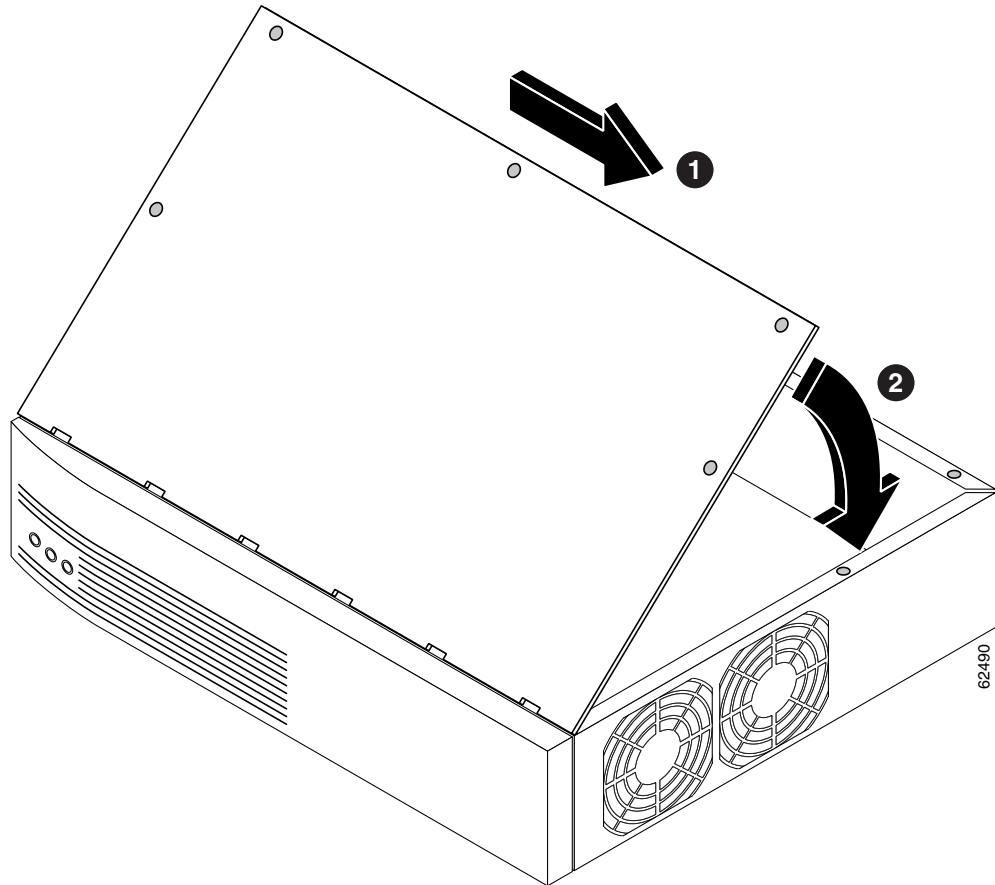
Caution

Before reinstalling the cover on the router, make sure that all cables are secured, and are not in danger of being pinched or cut.

This section describes how to reinstall the router cover. You need a number 2 Phillips screwdriver or flat blade screwdriver to complete this procedure:

- Step 1** Place the chassis on a flat surface.
- Step 2** Hold the cover at a 45-degree angle, and insert the tabs into the slots along the front (bezel) edge of the chassis. (See [Figure 15](#), [Figure 16](#), or [Figure 17](#).)
- Step 3** Center the cover over the chassis and lower it onto the chassis.

Figure 15 Replacing the Cover on a Cisco 2691



1 Insert tabs and slide cover

2 Close cover

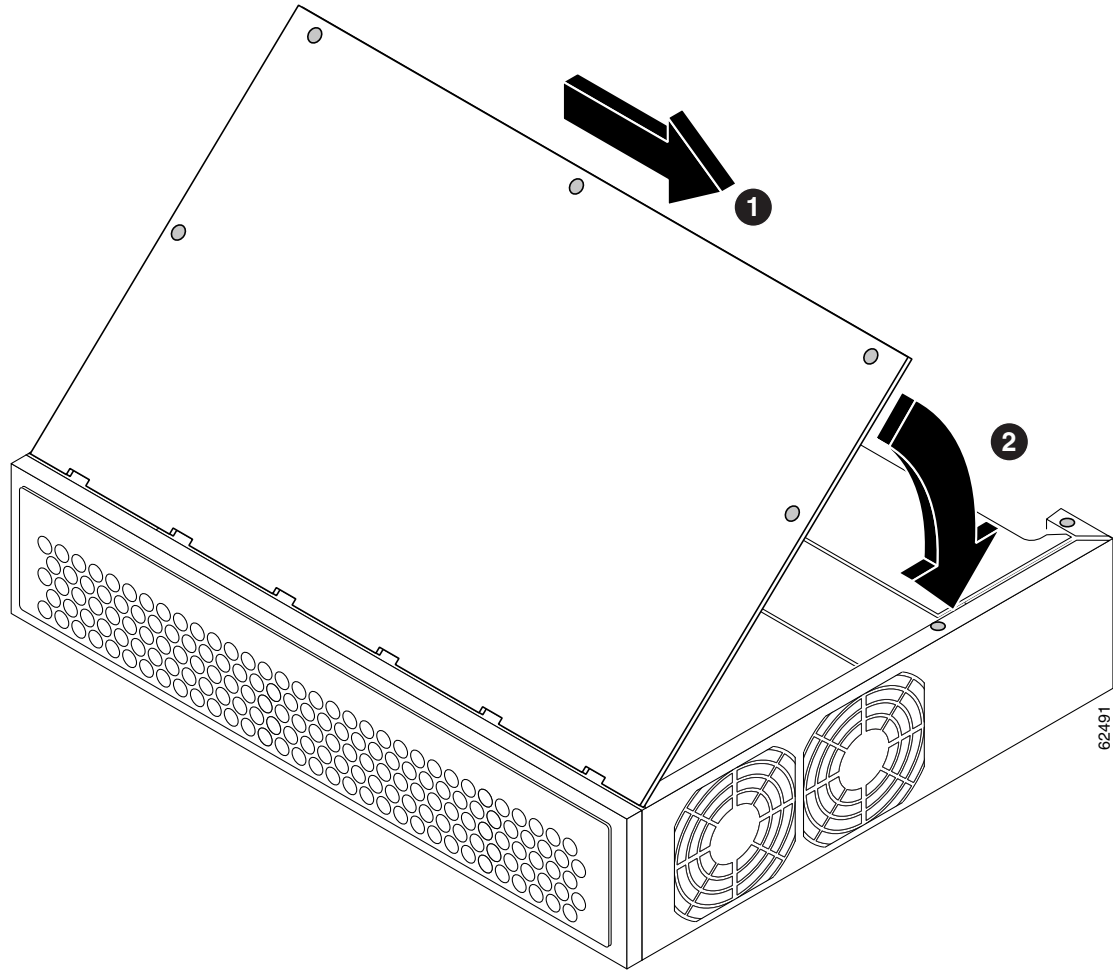
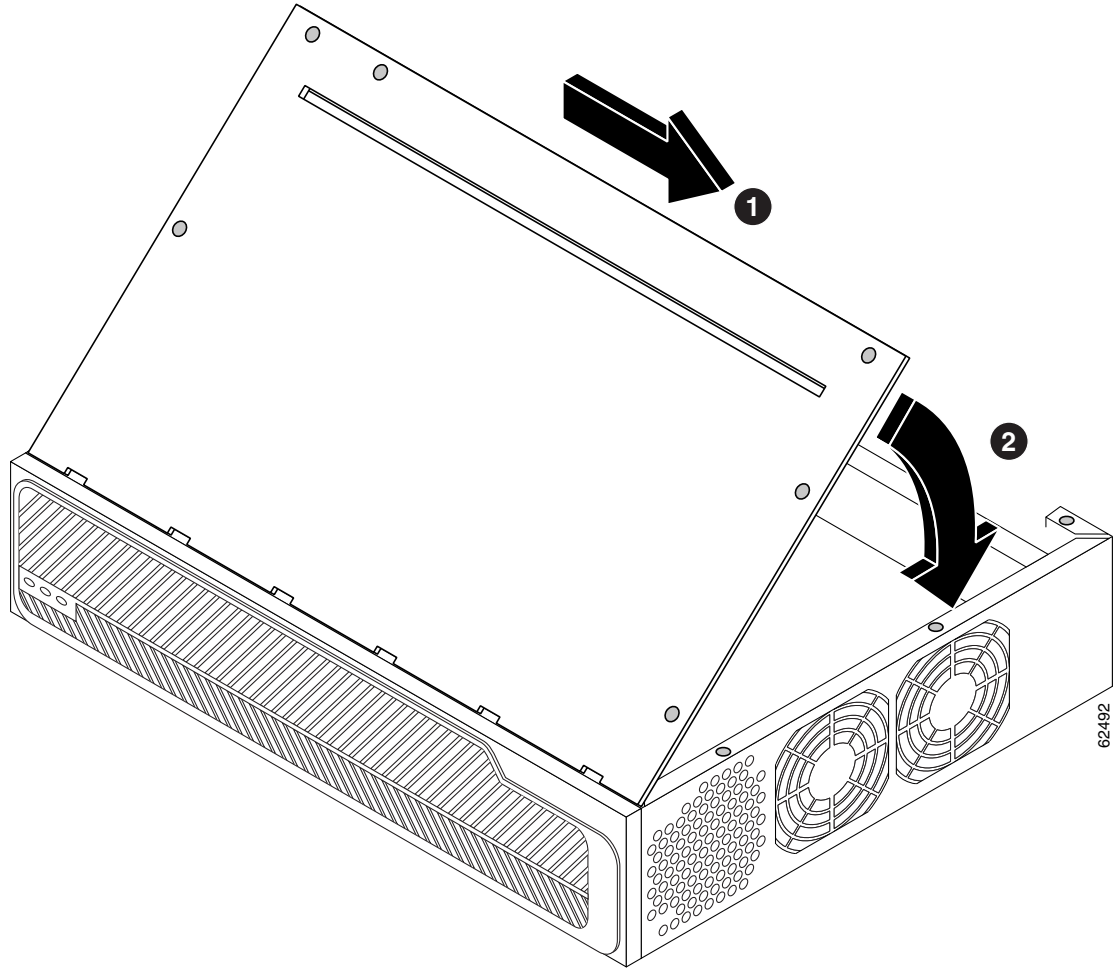
Figure 16 *Replacing the Cover on a Cisco 3631***1** Insert tabs and slide cover**2** Close cover

Figure 17 Replacing the Cover on a Cisco 3725

1	Insert tabs and slide cover	2	Close cover
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- Step 4** Reinstall the cover screws.
- Step 5** Reinstall the chassis on a rack or desktop.
- Step 6** Reconnect network interface cables.
- Step 7** Power ON the router.

**Warning**

After wiring the DC power supply, remove the tape from the circuit breaker switch handle and reinstate power by moving the handle of the circuit breaker to the ON position. To see translations of the various warnings that appear in this publication, refer to the Regulatory Compliance and Safety Information document that accompanied this device.

Formatting Procedures for CompactFlash Memory Cards

The following sections describe formatting procedures for internal and external CompactFlash memory cards.

Formatting Procedures

Cisco recommends that you erase (Class B) or format (Class C) new CompactFlash memory cards to initialize them with either a Class B or Class C Flash file system. This ensures proper formatting and enables the ROM monitor to recognize and boot the Flash.

The Class B Flash file system is also known as the low end file system (LEFS).

The Class C Flash file system is similar to the standard DOS file system.



Note

A CompactFlash memory card formatted with the standard DOS file system does not support booting from the ROM monitor.

Determining the File System on a CompactFlash Memory Card

To determine the file system of an external CompactFlash memory card, enter the **show slot0: all** command. To determine the file system of an internal CompactFlash memory card, enter the **show flash: all** command.

- If geometry and format information is not displayed, the card is formatted with a Class B Flash file system.
- If geometry and format information is displayed, the card is formatted with a Class C Flash file system.

The following examples show outputs for Class B and Class C Flash file systems:

External card with Class B Flash file system (geometry and format information not displayed):

```
Router#show slot0: all
```

Partition Mode	Size	Used	Free	Bank-Size	State	Copy
1	31360K	6502K	24857K	0K	Read/Write	Direct

```
Slot0 CompactFlash directory:
```

File	Length	Name/status
		addr fcksum ccksum
1	6658376	c3725-i-mz
		0x40 0xE0FF 0xE0FF

[6658440 bytes used, 25454200 available, 32112640 total]
31360K bytes of ATA Slot0 CompactFlash (Read/Write)

```
Chip information NOT available.
```

External card with Class C Flash file system (geometry and format information displayed):

```
Router#show slot0:all

-#- --length-- -----date/time----- path
1      6658376 Mar 01 1993 04:27:46 c3725-i-mz

25268224 bytes available (6664192 bytes used)

***** ATA Flash Card Geometry/Format Info *****

ATA CARD GEOMETRY
  Number of Heads:      4
  Number of Cylinders    490
  Sectors per Cylinder   32
  Sector Size            512
  Total Sectors          62720

ATA CARD FORMAT
  Number of FAT Sectors  31
  Sectors Per Cluster    8
  Number of Clusters     7796
  Number of Data Sectors 62560
  Base Root Sector       155
  Base FAT Sector        93
  Base Data Sector       187
```

Internal card with Class B Flash file system (geometry and format information not displayed):

```
Router# show flash: all

Partition   Size    Used      Free      Bank-Size  State      Copy
Mode
1           125184K 20390K    104793K      0K        Read/Write
Direct

System CompactFlash directory:
File Length Name/status
  addr      fcksum ccksum
1   6658376 c3725-i-mz
      0x40      0xE0FF 0xE0FF
2   14221136 c3631-telcoent-mz
      0x6599C8 0x5C3D 0x5C3D
[20879640 bytes used, 107308776 available, 128188416 total]
125184K bytes of ATA System CompactFlash (Read/Write)

Chip information NOT available.
```

Internal card with Class C Flash file system (geometry and format information displayed):

```
Router#show flash: all

-#- --length-- -----date/time----- path
1      6658376 Mar 01 1993 04:27:46 c3725-i-mz

25268224 bytes available (6664192 bytes used)

***** ATA Flash Card Geometry/Format Info *****

ATA CARD GEOMETRY
  Number of Heads:      4
  Number of Cylinders    490
  Sectors per Cylinder   32
  Sector Size            512
  Total Sectors          62720
```

Formatting CompactFlash Memory as a Class B Flash File System

Formatting CompactFlash Memory as a Class C File System

```
Router# format flash:
Format operation may take a while. Continue? [confirm]
Format operation will destroy all data in "flash:". Continue? [confirm]
Enter volume ID (up to 64 chars)[default flash]:
Current Low End File System flash card in flash will be formatted into DOS
File System flash card! Continue? [confirm]
Format:Drive communication & 1st Sector Write OK...
Writing Monlib sectors .....
```

```
Monlib write complete
..
Format:All system sectors written. OK...

Format:Total sectors in formatted partition:250592
Format:Total bytes in formatted partition:128303104
Format:Operation completed successfully.

Format of flash complete
```

File and Directory Procedures

The following sections describe file and directory operations for internal and external Cisco Flash memory cards. File and directory operations vary according to the formatted file system—Class B or Class C.

Operations for Use With Class B Flash File System

The following file operations are useful for CompactFlash memory cards formatted with a Class B Flash file system.

Copy files

To copy files to another location, enter the **copy {flash: | slot0:}** command.

The following example shows output for copying a Cisco IOS file from an internal CompactFlash memory card (**flash:**) to an external CompactFlash memory card (**slot0:**):

[illegible]

The following example shows output for copying a configuration file to the startup configuration in an internal CompactFlash memory card (**flash:**):

```
Router# copy flash:my-config1 startup-config
Destination filename [startup-config]?
[OK]
517 bytes copied in 4.188 secs (129 bytes/sec)
```

The following example shows output for copying a configuration file to the running configuration in an internal CompactFlash memory card (**flash:**):

```
Router# copy flash:my-config2 running-config
```

```
Destination filename [running-config]?
```

```
709 bytes copied in 0.72 secs
```

Display the contents of a CompactFlash memory card

To display the contents (directories and files) of a CompactFlash memory card formatted with a Class B Flash file system, enter the **dir {flash: | slot0:}** command or the **show {flash: | slot0:}** command.

The following example shows output for displaying the contents of an internal CompactFlash memory card using the **dir flash:** command:

```
Router# dir flash:
```

```
Directory of flash:/
```

```

 1  -rw-      5190020          <no date>  c3631-i-mz
 2  -rw-      6458584          <no date>  c3725-i-mz
 3  -rw-     16535740          <no date>  c3631-telcoent-mz
```

```
128450560 bytes total (100266024 bytes free)
```

The following example shows output for displaying the contents of an external CompactFlash memory card using the **show slot0:** command:

```
Router# show slot0:
```

```
System CompactFlash directory:
```

```
File Length Name/status
```

```

 1  5190020 c3631-i-mz
 2  6458584 c3725-i-mz
 3  16535740 c3631-telcoent-mz
```

```
[28184536 bytes used, 100266024 available, 128450560 total]
```

```
125440K bytes of ATA System CompactFlash (Read/Write)
```

Delete files from CompactFlash memory

To delete a file from CompactFlash memory, enter the **delete {flash: | slot0:}** command, followed by the **squeeze {flash: | slot0:}** command.

When a file is deleted in the Class B Flash file system, the memory space occupied by the deleted file is not released until you enter the **squeeze {flash: | slot0:}** command. Although the memory space once occupied by the deleted file remains, the deleted file cannot be recovered. To release the memory space occupied by a deleted file, enter the **squeeze {flash: | slot0:}** command.



Note

The **dir {flash: | slot0:}** command does not show deleted files; the **show {flash: | slot0:}** command shows all files, including any deleted files if the **squeeze {flash: | slot0:}** command has not been entered.

The following example shows output for deleting a Cisco IOS file from an external CompactFlash memory card, and then releasing the memory space originally occupied by the file:

```
Router# dir slot0:
```

```
Directory of slot0:/
```

```

 1  -rw-      6458208          <no date>  c3725-i-mz.tmp
 2  -rw-      6458208          <no date>  c3725-i-mz
```



```
Router# show slot0:
```

```
-#- --length-- -----date/time----- path
1      6658376 Mar 01 1993 00:29:52 c3725-i-mz
2      2124 Mar 01 1993 00:34:38 running-config
3      2622 Mar 01 1993 00:34:44 startup-config
```

```
25260032 bytes available (6672384 bytes used)
```

```
Router# dir slot0:
```

```
Directory of slot0:/
```

```
      3 -rw-      6455048   Mar 01 2001 00:04:06 c3725-i-mz
1579 -rw-      6458584   Mar 01 2001 00:24:38 c3725-i-mz.new
```

```
15912960 bytes total (2998272 bytes free)
```

Display geometry and format information

To display the geometry and format information of a CompactFlash memory card formatted with a Class C Flash file system, use the **show {flash: | slot0:} fileys** command.

The following example shows output for displaying the geometry and format information of an external Cisco Flash memory card:

```
Router# show slot0: fileys
```

```
***** ATA Flash Card Geometry/Format Info *****
```

ATA CARD GEOMETRY

```
Number of Heads:      4
Number of Cylinders   490
Sectors per Cylinder  32
Sector Size           512
Total Sectors         62720
```

ATA CARD FORMAT

```
Number of FAT Sectors  31
Sectors Per Cluster    8
Number of Clusters     7796
Number of Data Sectors 62560
Base Root Sector       155
Base FAT Sector         93
Base Data Sector       187
```

Delete files from CompactFlash Memory

To delete a file from a CompactFlash memory card, use the **delete {flash: | slot0:}** command.

The following example shows output for deleting a Cisco IOS file from an internal CompactFlash memory card:

```
Router# delete flash:c3725-i-mz.tmp
```

```
Delete filename [c3725-i-mz.tmp]?
Delete flash:c3725-i-mz.tmp? [confirm]
Router# dir flash:
```

```
Directory of flash:/
```

```
No files in directory
```

```
128094208 bytes total (128094208 bytes free)
```

Rename a file

To rename a file in a CompactFlash memory card, use the **rename {flash: | slot0:}** command.

The following example shows output for renaming a Cisco IOS file in an internal CompactFlash memory card:

```
Router# dir flash:

Directory of flash:/

   3  -rw-     6458388   Mar 01 1993 00:00:58  c3725-i-mz.tmp
1580 -rw-     6462268   Mar 06 1993 06:14:02  c3725-i-mz.3600ata

63930368 bytes total (51007488 bytes free)
Router# rename flash:c3725-i-mz.tmp flash:c3725-i-mz

Destination filename [c3725-i-mz]?
Router# dir flash:

Directory of flash:/

1580 -rw-     6462268   Mar 06 1993 06:14:02  c3725-i-mz.3600ata
   3  -rw-     6458388   Mar 01 1993 00:01:24  c3725-i-mz

63930368 bytes total (51007488 bytes free)
```

Display file content

To display the content of a file in a CompactFlash memory card, use the **more {flash: | slot0:}** command.

The following example shows output from the **more {flash: | slot0:}** command on an internal Compact Flash card:

```
Router# more flash:c3725-i-mz.tmp

00000000: 7F454C46 01020100 00000000 00000000  .ELF ....
00000010: 00020061 00000001 80008000 00000034  ...a ....4
00000020: 00000054 20000001 00340020 00010028  ...T ...4. ...
00000030: 00050008 00000001 0000011C 80008000  .... ..
00000040: 80008000 00628A44 00650EEC 00000007  .... .b.D .e.l
00000050: 0000011C 0000001B 00000001 00000006  .... ..
00000060: 80008000 0000011C 00004000 00000000  .... ..@.
00000070: 00000000 00000008 00000000 00000021  .... ..!
00000080: 00000001 00000002 8000C000 0000411C  .... ..@. ..A.
00000090: 00000700 00000000 00000000 00000004  .... ..
000000A0: 00000000 00000029 00000001 00000003  .... ..)
000000B0: 8000C700 0000481C 00000380 00000000  ..G. ..H.
000000C0: 00000000 00000004 00000000 0000002F  .... ..
000000D0: 00000001 10000003 8000CA80 00004B9C  .... ..J. ..K.
000000E0: 00000020 00000000 00000000 00000008  ... ..
000000F0: 00000000 0000002F 00000001 10000003  .... ..
00000100: 8000CAA0 00004BBC 00623FA4 00000000  ..J ..K< .b?$
00000110: 00000000 00000008 00000000 3C1C8001  .... ..<...
00000120: 679C4A80 3C018001 AC3DC70C 3C018001  g.J. <... ,=G. <...
00000130: AC3FC710 3C018001 AC24C714 3C018001  ,?G. <... ,?G. <...
00000140: AC25C718 3C018001 AC26C71C 3C018001  ,%G. <... ,%G. <...
00000150: AC27C720 3C018001 AC30C724 3C018001  , 'G <... ,0G$ <...
00000160: AC31C728 3C018001 AC32C72C 3C018001  ,1G( <... ,2G, <...

--More-- q
```

Directory Operations for Class C Flash File System

Create a new directory

To create a directory in CompactFlash memory, use the **mkdir {flash: | slot0:}** command.

The following example shows output for first displaying the contents of an internal CompactFlash card, and then creating a directory named **config** and a subdirectory named **test-config**:

```
Router# dir flash:

Directory of flash:/

   3  -rw-          6458208   Mar 01 1993 00:04:08  c3725-i-mz.tmp

128094208 bytes total (121634816 bytes free)
Router# mkdir flash:/config

Create directory filename [config]?
Created dir flash:/config
Router# mkdir flash:/config/test-config

Create directory filename [/config/test-config]?
Created dir flash:/config/test-config
Router# dir flash:

Directory of flash:/

   3  -rw-          6458208   Mar 01 1993 00:04:08  c3725-i-mz.tmp
1580  drw-              0   Mar 01 1993 23:48:36   config

128094208 bytes total (121626624 bytes free)
Router# cd flash:/config
Router# dir flash:

Directory of flash:/config/

1581  drw-              0   Mar 01 1993 23:50:08   test-config

128094208 bytes total (121626624 bytes free)
```

Remove a directory

To remove a directory from CompactFlash memory, use the **rmdir {flash: | slot0:}** command.

Before you can remove a directory, all files and subdirectories must be removed from the directory.

The following example shows output for displaying the contents of an internal CompactFlash card, then removing the subdirectory named **test-config**:

```
Router# dir flash:

Directory of flash:/config/

1581  drw-              0   Mar 01 1993 23:50:08   test-config

128094208 bytes total (121626624 bytes free)
Router# rmdir flash:/config/test-config

Remove directory filename [/config/test-config]?
Delete flash:/config/test-config? [confirm]
Removed dir flash:/config/test-config
Router# dir flash:

Directory of flash:/config/
```

No files in directory

128094208 bytes total (121630720 bytes free)

Enter a directory and determine which directory you are in

To enter a directory in CompactFlash memory, use the **cd** command.

To determine which directory you are in, use the **pwd** command.

If you enter only **cd**, the router will enter the default home directory, which is **flash:/**.

The following example shows output for the following actions:

- Entering the home directory of a CompactFlash memory card in an internal slot (**flash:/**)
- Verifying that you are in the home directory
- Displaying the contents of the home directory
- Entering the **/config** directory
- Verifying that you are in the **/config** directory
- Entering the home directory of a CompactFlash memory card in an external slot (**slot0:/**)
- Verifying that you are in the **slot0:/** directory
- Returning to the home directory (**flash:/**)
- Verifying that you are in the home directory

Router# **cd**

Router# **pwd**

flash:

Router# **dir**

Directory of flash:/

3	-rw-	6458208	Mar 01 1993 00:04:08	c3725-i-mz.tmp
1580	drw-	0	Mar 01 1993 23:48:36	config

128094208 bytes total (121630720 bytes free)

Router# **cd config**

Router# **pwd**

flash:/config/

Router# **cd slot0:**

Router# **pwd**

slot0:/

Router# **cd**

Router# **pwd**

flash:

Obtaining Documentation

The following sections provide sources for obtaining documentation from Cisco Systems.

World Wide Web

You can access the most current Cisco documentation on the World Wide Web at the following sites:

- <http://www.cisco.com>
- <http://www-china.cisco.com>
- <http://www-europe.cisco.com>

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If you have a priority level 3 (P3) or priority level 4 (P4) problem, contact TAC by going to the TAC website:

<http://www.cisco.com/tac>

P3 and P4 level problems are defined as follows:

- P3—Your network performance is degraded. Network functionality is noticeably impaired, but most business operations continue.
- P4—You need information or assistance on Cisco product capabilities, product installation, or basic product configuration.

In each of the above cases, use the Cisco TAC website to quickly find answers to your questions.

To register for Cisco.com, go to the following website:

<http://www.cisco.com/register/>

If you cannot resolve your technical issue by using the TAC online resources, Cisco.com registered users can open a case online by using the TAC Case Open tool at the following website:

<http://www.cisco.com/tac/caseopen>

Contacting TAC by Telephone

If you have a priority level 1 (P1) or priority level 2 (P2) problem, contact TAC by telephone and immediately open a case. To obtain a directory of toll-free numbers for your country, go to the following website:

<http://www.cisco.com/warp/public/687/Directory/DirTAC.shtml>

P1 and P2 level problems are defined as follows:

- P1—Your production network is down, causing a critical impact to business operations if service is not restored quickly. No workaround is available.
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